



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/069,101	04/17/2002	Andrew Mills	SGU-0050	7501
7590		09/08/2004	EXAMINER	
Fleshner & Kim		STAJCOVICI, STEFAN		
PO Box 221200		ART UNIT		
Chantilly, VA 20153-1200		PAPER NUMBER		
		1732		
DATE MAILED: 09/08/2004				

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	10/069,101	MILLS ET AL.	
	Examiner	Art Unit	
	Stefan Staicovici	1732	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 09 June 2004.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 17-23 and 32-40 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 17-23 and 32-40 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|---|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Response to Amendment

1. Applicants' amendment filed June 9, 2004 has been entered. Claims 17 and 32 have been amended. Claims 1-16 and 24-31 have been canceled. New claims 33-40 have been added.

Claims 17-23 and 32-40 are pending in the instant application.

Claim Rejections - 35 USC § 112

2. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

3. Claims 17-23 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

In claim 17, line 4, the limitation of "incorporating *additional* fabric inserts" (emphasis added) is unclear and indefinite because in order to incorporate "*additional* fabric inserts" some fabric inserts must already exist and such has not been claimed. As such the relationship of the "additional fabric inserts" to other elements of the claimed subject matter is unclear.

Claims 18-23 are rejected as dependent claims.

Claim Rejections - 35 USC § 103

4. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

5. Claims 17-19, 34-40 are rejected under 35 U.S.C. 103(a) as being unpatentable over GB 1 373 344 in view of FR 2 462 266 and in further view of Slysh (US Patent No. 4,012,549).

GB 1 373 344 teaches the basic claimed process of molding a reinforced nodal structure including, placing a plurality of resin pre-impregnated fibers (constant cross-section) in channels (24) of a nodal mold (21), closing said mold with pressure plates (26) and curing said resin (see page 1, lines 70-89; page 2, lines 8-35; Figures 1-2).

Regarding claims 17-18 and 37-38, although GB 1 373 344 teaches a plurality of resin pre-impregnated fibers having constant cross-section, GB 1 373 344 does not teach a cored reinforcement, specifically a foam core carbon fiber structure. FR 2 462 266 teaches a fiber reinforced material including a foam core and carbon fiber outer envelope (see page 4, line 15 and line 25). Therefore, it would have been obvious for one of ordinary skill in the art to have provided the fiber reinforced material including a foam core and carbon fiber outer envelope as taught by FR 2 462 266 as an alternative to the resin pre-impregnated carbon fibers in the process of GB 1 373 344 because, FR 2 462 266 specifically teaches that a fiber reinforced material including a foam core and carbon fiber outer envelope provides for a structure that has improved strength and flexibility, hence providing for an improved product.

Further in regard to claims 17-18, 35 and 37-38, GB 1 373 344 in view FR 2 462 266 does not teach fabric inserts positioned in the mold channels. Slysh ('549) teaches an isogrid structure including, fabric strip inserts (18) that result in an improved product (see col. 2, lines

37-45). Therefore it would have been obvious for one of ordinary skill in the art to have provided fabric strip inserts as taught by Slysh ('549) in the mold channels in the process of GB 1 373 344 in view FR 2 462 266 because, Slysh ('549) teaches that such strips increase the strength and quality of an isogrid product, whereas GB 1 373 344 in view FR 2 462 266 teach a process for making an isogrid structure.

In regard to claim 19, GB 1 373 344 teaches compressing rubber blocks (13, 14) by a top pressure plate (12) such that said resin pre-impregnated carbon fibers are being compressed. It is submitted that an overfill is present in order for compaction of said resin pre-impregnated carbon fibers to occur.

Specifically regarding claims 34 and 39, it is submitted that the "insert" in the process of GB 1 373 344 in view FR 2 462 266 and in further view of Slysh ('549) is placed before, during or after positioning the fiber material in the mold because said "insert" becomes an integral part of said resulting molded product by the process of GB 1 373 344 in view FR 2 462 266 and in further view of Slysh ('549) and as such must be placed in the mold prior to curing, hence before, during or after positioning the fiber material in the mold.

Regarding claims 36 and 40, Slysh ('549) teaches an isogrid structure including in which fabric strip inserts (18) are placed in the top and bottom surfaces, hence resulting in an improved product (see col. 2, lines 37-45). Hence, it is submitted that such inserts are to be placed before or after a plurality of fiber layers have been placed in a mold in the process of GB 1 373 344 in view FR 2 462 266 and in further view of Slysh ('549). Therefore it would have been obvious for one of ordinary skill in the art to have provided fabric strip inserts as taught by Slysh ('549) in

the mold channels in the process of GB 1 373 344 in view of FR 2 462 266 because, Slysh ('549) teaches that such strips increase the strength and quality of an isogrid product, whereas GB 1 373 344 in view of FR 2 462 266 teach a process for making an isogrid structure.

6. Claims 17-18 and 32-40 are rejected under 35 U.S.C. 103(a) as being unpatentable over Huybrechts *et al.* (US Patent No. 6,245,274) in view of FR 2 462 266 and in further view of Slysh (US Patent No. 4,012,549).

Huybrechts *et al.* ('274) teach the basic claimed process of molding a reinforced nodal structure including, placing a plurality of resin pre-impregnated fibers (constant cross-section) in channels of a compaction tool (rib compaction area), closing said compaction tool with a vacuum bag and curing said resin in an autoclave (see Abstract).

Regarding claims 17-18 and 37-38, although Huybrechts *et al.* ('274) teach a plurality of resin pre-impregnated fibers having constant cross-section, Huybrechts *et al.* ('274) do not teach a cored reinforcement, specifically a foam core carbon fiber structure. FR 2 462 266 teaches a fiber reinforced material including a foam core and carbon fiber outer envelope (see page 4, line 15 and line 25). Therefore, it would have been obvious for one of ordinary skill in the art to have provided the fiber reinforced material including a foam core and carbon fiber outer envelope as taught by FR 2 462 266 as an alternative to the resin pre-impregnated fibers in the process of Huybrechts *et al.* ('274) because, FR 2 462 266 specifically teaches that a fiber reinforced material including a foam core and carbon fiber outer envelope provides for a structure that has improved strength and flexibility, hence providing for an improved product.

Further in regard to claims 17-18, 35 and 37-38, Huybrechts *et al.* ('274) in view FR 2 462 266 does not teach fabric inserts positioned in the mold channels. Slysh ('549) teaches an isogrid structure including, fabric strip inserts (18) that result in an improved product (see col. 2, lines 37-45). Therefore it would have been obvious for one of ordinary skill in the art to have provided fabric strip inserts as taught by Slysh ('549) in the mold channels in the process of Huybrechts *et al.* ('274) in view FR 2 462 266 because, Slysh ('549) teaches that such strips increase the strength and quality of an isogrid product, whereas Huybrechts *et al.* ('274) in view FR 2 462 266 teach a process for making an isogrid structure.

In regard to claim 32, Huybrechts *et al.* ('274) teach bagging and curing in an autoclave. It is submitted that bagging includes a step of drawing a vacuum onto said bag in order for the pressure in the autoclave to be greater than the pressure inside the bag.

Specifically regarding claims 33-34 and 39, it is submitted that the "insert" in the process of Huybrechts *et al.* ('274) in view FR 2 462 266 and in further view of Slysh ('549) is placed before, during or after positioning the fiber material in the mold because said "insert" becomes an integral part of said resulting molded product by the process of Huybrechts *et al.* ('274) in view FR 2 462 266 and in further view of Slysh ('549) and as such must be placed in the mold prior to curing, hence before, during or after positioning the fiber material in the mold.

Regarding claims 36 and 40, Slysh ('549) teaches an isogrid structure including in which fabric strip inserts (18) are placed in the top and bottom surfaces, hence resulting in an improved product (see col. 2, lines 37-45). Hence, it is submitted that such inserts are to be placed before or after a plurality of fiber layers have been placed in a mold in the process of Huybrechts *et al.*

(‘274) in view FR 2 462 266 and in further view of Slysh (‘549). Therefore it would have been obvious for one of ordinary skill in the art to have provided fabric strip inserts as taught by Slysh (‘549) in the mold channels in the process of Huybrechts *et al.* (‘274) in view FR 2 462 266 because, Slysh (‘549) teaches that such strips increase the strength and quality of an isogrid product, whereas Huybrechts *et al.* (‘274) in view FR 2 462 266 teach a process for making an isogrid structure.

9. Claims 20-22 are rejected under 35 U.S.C. 103(a) as being unpatentable over GB 1 373 344 in view of FR 2 462 266 and in further view of Slysh (US Patent No. 4,012,549) and Koury (US Patent No. 6,073,670).

GB 1 373 344 in view of FR 2 462 266 and in further view of Slysh (‘549) teaches the basic claimed process as described above.

Regarding claims 20-21, GB 1 373 344 in view of FR 2 462 266 and in further view of Slysh (‘549) does not teach a feeder head under computer numerical control that severs length of reinforcement material. Koury (‘670) teaches a fiber placement head that places fiber material into channels of a nodal mold such that both the fiber head and the mold are movable and under computer numerical control (see col. 3, lines 19-53). Further, Koury (‘670) teaches that said fiber placement head includes a cutter means (see col. 4, lines 35-36). Therefore, it would have been obvious for one of ordinary skill in the art to have provided a feeder head under computer numerical control that severs length of reinforcement material as taught by Koury (‘670) in the process of GB 1 373 344 in view of FR 2 462 266 and in further view of Slysh (‘549) because,

Koury ('670) specifically teaches that such a feeder head significantly reduces the time and cost for disposing fiber means, hence increased productivity and reduced costs are obtained.

In regard to claim 22, GB 1 373 344 in view of FR 2 462 266 and in further view of Slysh ('549) does not teach a tacky reinforcement. Koury ('670) specifically teaches a tacky reinforcement material that is placed into channels of a nodal mold (see col. 4, lines 5-10). Therefore, it would have been obvious for one of ordinary skill in the art to have provided a feeder head under computer numerical control that severs length of tacky reinforcement material as taught by Koury ('670) in the process of GB 1 373 344 in view of FR 2 462 266 and in further view of Slysh ('549) because, Koury ('670) specifically teaches that such a feeder head significantly reduces the time and cost for disposing fiber means, hence increased productivity and reduced costs are obtained and also because, Koury ('670) teaches that a tacky fiber material is required to make a reinforced nodal structure, whereas GB 1 373 344 in view of FR 2 462 266 and in further view of Slysh ('549) teaches a reinforced nodal structure.

10. Claims 20-22 are rejected under 35 U.S.C. 103(a) as being unpatentable over Huybrechts *et al.* (US Patent No. 6,245,274) in view of FR 2 462 266 and in further view of Slysh (US Patent No. 4,012,549) and Koury (US Patent No. 6,073,670).

Huybrechts *et al.* ('274) in view of FR 2 462 266 and in further view of Slysh ('549) teaches the basic claimed process as described above.

Regarding claims 20-21, Huybrechts *et al.* ('274) in view of FR 2 462 266 and in further view of Slysh ('549) does not teach a feeder head under computer numerical control that severs length of reinforcement material. Koury ('670) teaches a fiber placement head that places fiber

material into channels of a nodal mold such that both the fiber head and the mold are movable and under computer numerical control (see col. 3, lines 19-53). Further, Koury ('670) teaches that said fiber placement head includes a cutter means (see col. 4, lines 35-36). Therefore, it would have been obvious for one of ordinary skill in the art to have provided a feeder head under computer numerical control that severs length of reinforcement material as taught by Koury ('670) in the process of Huybrechts *et al.* ('274) in view of FR 2 462 266 and in further view of Slysh ('549) because, Koury ('670) specifically teaches that such a feeder head significantly reduces the time and cost for disposing fiber means, hence increased productivity and reduced costs are obtained.

In regard to claim 22, Huybrechts *et al.* ('274) in view of FR 2 462 266 and in further view of Slysh ('549) do not teach a tacky reinforcement. Koury ('670) specifically teaches a tacky reinforcement material that is placed into channels of a nodal mold (see col. 4, lines 5-10). Therefore, it would have been obvious for one of ordinary skill in the art to have provided a feeder head under computer numerical control that severs length of tacky reinforcement material as taught by Koury ('670) in the process of Huybrechts *et al.* ('274) in view of FR 2 462 266 and in further view of Slysh ('549) because, Koury ('670) specifically teaches that such a feeder head significantly reduces the time and cost for disposing fiber means, hence increased productivity and reduced costs are obtained and also because, Koury ('670) teaches that a tacky fiber material is required to make a reinforced nodal structure, whereas Huybrechts *et al.* ('274) in view of FR 2 462 266 and in further view of Slysh ('549) teaches a reinforced nodal structure.

11. Claim 23 is rejected under 35 U.S.C. 103(a) as being unpatentable over GB 1 373 344 in view of FR 2 462 266 and in further view of Slysh (US Patent No. 4,012,549) and Mayes, Jr. *et al.* (US Patent No. 4,137,354).

GB 1 373 344 in view of FR 2 462 266 and in further view of Slysh ('549) teaches the basic claimed process as described above.

Regarding claim 23, GB 1 373 344 in view of FR 2 462 266 and in further view of Slysh ('549) does not teach introducing an insert in order to provide localized strengthening. Mayes, Jr. *et al.* ('354) teach a carbon fiber reinforced nodal structure having an insert (18) positioned at each node (12) (see col. 3, lines 34-36). Therefore, it would have been obvious for one of ordinary skill to have provided an insert positioned at each node as taught by Mayes, Jr. *et al.* ('354) in the reinforced nodal structure obtained by the process of GB 1 373 344 in view of FR 2 462 266 and in further view of Slysh ('549) because, Mayes, Jr. *et al.* ('354) teach that such inserts provides for improved strength because said fibers intersect about said insert (see Figure 2) and also because, both GB 1 373 344 and Mayes, Jr. *et al.* ('354) teach similar end products and materials.

12. Claim 23 is rejected under 35 U.S.C. 103(a) as being unpatentable over Huybrechts *et al.* (US Patent No. 6,245,274) in view of FR 2 462 266 and in further view of Slysh (US Patent No. 4,012,549) and Mayes, Jr. *et al.* (US Patent No. 4,137,354).

Huybrechts *et al.* ('274) in view of FR 2 462 266 and in further view of Slysh ('549) teaches the basic claimed process as described above.

Regarding claim 23, Huybrechts *et al.* ('274) in view of FR 2 462 266 and in further view of Slysh ('549) does not teach introducing an insert in order to provide localized strengthening. Mayes, Jr. *et al.* ('354) teach a carbon fiber reinforced nodal structure having an insert (18) positioned at each node (12) (see col. 3, lines 34-36). Therefore, it would have been obvious for one of ordinary skill to have provided an insert positioned at each node as taught by Mayes, Jr. *et al.* ('354) in the reinforced nodal structure obtained by the process of Huybrechts *et al.* ('274) in view of FR 2 462 266 and in further view of Slysh ('549) because, Mayes, Jr. *et al.* ('354) teach that such inserts provides for improved strength because said fibers intersect about said insert (see Figure 2) and also because, both Huybrechts *et al.* ('274) and Mayes, Jr. *et al.* ('354) teach similar end products and materials.

13. Claim 22 is rejected under 35 U.S.C. 103(a) as being unpatentable over GB 1 373 344 in view of FR 2 462 266 and in further view of Slysh (US Patent No. 4,012,549) and White *et al.* (US Patent No. 5,427,725).

GB 1 373 344 in view of FR 2 462 266 and in further view of Slysh ('549) teaches the basic claimed process as described above.

Regarding claim 22, GB 1 373 344 in view of FR 2 462 266 and in further view of Slysh ('549) does not teach tackifying the fiber reinforcement. White *et al.* (725) teach molding a fiber composite including, a first step of partially curing a tackified fiber reinforced composite and a second step of molding said tackified composite (see Abstract). It would have been obvious for one of ordinary skill in the art to have tackified the fiber reinforced preform as taught by White *et al.* ('725) in the process of GB 1 373 344 in view of FR 2 462 266 and in further view of Slysh

(‘549) because, White *et al.* (‘725) specifically teach that tackifying provides for net-shape molding of fiber reinforced composite structures, which in turn reduces production time, hence increasing productivity.

14. Claim 22 is rejected under 35 U.S.C. 103(a) as being unpatentable over Huybrechts *et al.* (US Patent No. 6,245,274) in view of FR 2 462 266 and in further view of Slysh (US Patent No. 4,012,549) and White *et al.* (US Patent No. 5,427,725).

Huybrechts *et al.* (‘274) in view of FR 2 462 266 and in further view of Slysh (‘549) teaches the basic claimed process as described above.

Regarding claim 22, Huybrechts *et al.* (‘274) in view of FR 2 462 266 and in further view of Slysh (‘549) does not teach tackifying the fiber reinforcement. White *et al.* (‘725) teach molding a fiber composite including, a first step of partially curing a tackified fiber reinforced composite and a second step of molding said tackified composite (see Abstract). It would have been obvious for one of ordinary skill in the art to have tackified the fiber reinforced preform as taught by White *et al.* (‘725) in the process of Huybrechts *et al.* (‘274) in view of FR 2 462 266 and in further view of Slysh (‘549) because, White *et al.* (‘725) specifically teach that tackifying provides for net-shape molding of fiber reinforced composite structures, which in turn reduces production time, hence increasing productivity.

15. Claims 17-18, 20-22 and 34-40 are rejected under 35 U.S.C. 103(a) as being unpatentable over Deckers *et al.* (US Patent No. 6,050,315) in view of FR 2 462 266 and in further view of Slysh (US Patent No. 4,012,549).

Deckers *et al.* ('315) teaches the basic claimed process of molding a reinforced nodal structure including, placing a plurality of resin pre-impregnated fibers (constant cross-section) in channels (22) of a nodal mold, closing said mold with pressure plates (130) and curing said resin (see col. 11, lines 5-10 and 40-65; Figure 17).

Regarding claims 17-18 and 37-38, although Deckers *et al.* ('315) teaches a plurality of resin pre-impregnated carbon fibers having constant cross-section, Deckers *et al.* ('315) does not teach a cored reinforcement, specifically a foam core carbon fiber structure. FR 2 462 266 teaches a fiber reinforced material including a foam core and carbon fiber outer envelope (see page 4, line 15 and line 25). Therefore, it would have been obvious for one of ordinary skill in the art to have provided the fiber reinforced material including a foam core and carbon fiber outer envelope as taught by FR 2 462 266 as an alternative to the resin pre-impregnated carbon fibers in the process of Deckers *et al.* ('315) because, FR 2 462 266 specifically teaches that a fiber reinforced material including a foam core and carbon fiber outer envelope provides for a structure that has improved strength and flexibility, hence providing for an improved product.

Further in regard to claims 17-18, 35 and 37-38, Deckers *et al.* ('315) in view FR 2 462 266 does not teach fabric inserts positioned in the mold channels. Slysh ('549) teaches an isogrid structure including, fabric strip inserts (18) that result in an improved product (see col. 2, lines 37-45). Therefore it would have been obvious for one of ordinary skill in the art to have provided fabric strip inserts as taught by Slysh ('549) in the mold channels in the process of Deckers *et al.* ('315) in view FR 2 462 266 because, Slysh ('549) teaches that such strips increase the

strength and quality of an isogrid product, whereas Deckers *et al.* ('315) in view FR 2 462 266 teach a process for making an isogrid structure.

In regard to claims 20-21, Deckers *et al.* ('315) teaches a feeder head under computer numerical control that severs length of reinforcement material (see col. 7, line 27 through col. 8, line 18).

Specifically regarding claim 22, Further, Deckers *et al.* ('315) teaches thermal tacking of previously laid reinforcement material (see col. 7, lines 15-26).

Specifically regarding claims 34 and 39, it is submitted that the "insert" in the process of Deckers *et al.* ('315) in view FR 2 462 266 and in further view of Slysh ('549) is placed before, during or after positioning the fiber material in the mold because said "insert" becomes an integral part of said resulting molded product by the process of Deckers *et al.* ('315) in view FR 2 462 266 and in further view of Slysh ('549) and as such must be placed in the mold prior to curing, hence before, during or after positioning the fiber material in the mold.

Regarding claims 36 and 40, Slysh ('549) teaches an isogrid structure including in which fabric strip inserts (18) are placed in the top and bottom surfaces, hence resulting in an improved product (see col. 2, lines 37-45). Hence, it is submitted that such inserts are to be placed before or after a plurality of fiber layers have been placed in a mold in the process of Deckers *et al.* ('315) in view FR 2 462 266 and in further view of Slysh ('549). Therefore it would have been obvious for one of ordinary skill in the art to have provided fabric strip inserts as taught by Slysh ('549) in the mold channels in the process of Deckers *et al.* ('315) in view FR 2 462 266 because, Slysh ('549) teaches that such strips increase the strength and quality of an isogrid

product, whereas Deckers *et al.* ('315) in view FR 2 462 266 teach a process for making an isogrid structure.

Response to Arguments

7. Applicants' arguments filed June 9, 204 have been considered.

Applicants argue that the art of record does not teach or suggest, either alone or in combination, a process of molding a reinforced nodal structure including, additional fabric inserts. However, this argument is drawn to a newly presented claim limitation, not previously presented and as such, has been rejected in this Office Action as set forth above.

8. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Conclusion

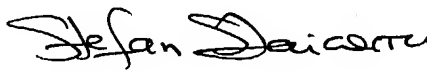
9. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

10. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Stefan Staicovici, Ph.D. whose telephone number is (571) 272-1208. The examiner can normally be reached on Monday-Friday 9:30 AM to 6:00 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Michael P. Colaianni, can be reached on (571) 272-1196. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Stefan Staicovici, PhD


Primary Examiner 9/7/04

AU 1732

September 7, 2004